

Application No.: 10/711,798
Examiner: SZABO, STEPHEN J
Art Unit: 3714

Applicant: Chiu-Hao Cheng

IN THE CLAIMS

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Please amend the claims as follows.

Claim 1-9 (canceled).

Claim 10. (currently amended) A photographic pointer positioning system comprising a game machine main unit (~~system-main-unit~~), a display screen connected to said game machine main unit (~~system-main-unit~~) for video output, and a photographic pointing device connectable to said game machine main unit (~~system-main-unit~~), said photographic pointing device comprising a control circuit, a communication interface, a camera, at least one reference sign, and a set of buttons, wherein:

said control circuit controls the operation of said camera and receives image signal from said camera;

said camera is controlled by said control circuit to take the picture of a whole display area of said display screen and to transmit the obtained image signal to said control circuit,

said at least one reference sign is respectively mounted in said display screen for reference in scan and recognition processing to be done by said game machine main unit (~~system-main-unit~~) to accelerate the processing speed;

said communication interface is controlled by said control circuit to transmit the image signal from said camera to said game machine main unit (~~system-main-unit~~) for further scan and recognition processing;

said buttons are respectively electrically connected to said control circuit for operation by user,

said game machine main unit (~~system-main-unit~~) calculates the coordinate value of the aiming point of said camera at said display screen subject to the image signal

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received from said camera and outputs the calculated data to said display screen for output.

Claim 11. (original) The photographic pointer positioning system as claimed in claim 10, wherein said at least one reference sign is respectively formed of an illuminator.

Claim 12. (currently amended) The photographic pointer positioning system as claimed in claim 11, wherein said illuminator is a light emitting diode, ~~bulb~~ or bulb any ~~suitable light emitting materials~~.

Claim 13. (currently amended) The photographic pointer positioning system as claimed in claim 10, wherein said at least one reference sign is respectively installed in ~~a~~ the border area of said display screen outside the display area of said display screen.

Claim 14. (original) The photographic pointer positioning system as claimed in claim 10, wherein said at least one reference sign is respectively mounted within the display area of said display screen.

Claim 15. (currently amended) The photographic pointer positioning system as claimed in claim 10, wherein said game machine main unit (~~system main unit~~) is a computer system, big game machine, TV game machine or computer terminal system.

Claim 16. (currently amended) The photographic pointer positioning system as claimed in claim 10, wherein said communication interface is connected to said game machine main unit (~~system main unit~~) by a signal line for wire communication with said game machine main unit (~~system main unit~~).

Claim 17. (currently amended) The photographic pointer positioning system as claimed in claim 10, wherein said communication interface is a wireless communication interface for wireless communication with said game machine main unit (~~system main~~

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unit).

Claim 18. (currently amended) The photographic pointer positioning system as claimed in claim 10, wherein said photographic pointing device provides the functions of an optical mouse, a tablet and a light gun.

Claim 19-20 (canceled).

Claim 21. (new) A photographic pointer positioning processing process for a photographic pointer positioning system comprising a game machine main unit, a display screen connected to said game machine main unit for video output, and a light gun-like photographic pointing device connected to said game machine main unit, said photographic pointing device comprising a control circuit, a communication interface, a camera, at least one reference sign and a set of buttons, said photographic pointer positioning processing process comprising:

(A) mounting said at least one reference sign in the border area of said display screen around a display area;

(B) controlling said camera to pick up an image of said whole display area of said display screen and to send an image signal back to said control circuit;

(C) driving said control circuit to send the image signal obtained from said camera to said game machine main unit via said communication interface;

(D) controlling said game machine main unit to run scan and recognition processes by using said at least one reference sign for comparison;

(E) driving said game machine main unit to compare the processed data to the pixels of said camera so as to obtain coordinate values of the four corners of said display area of said display screen in the photographed picture;

(F) driving said game machine main unit to put the coordinate values of four

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corners of said display area of the display screen in the photographed picture and a coordinate value of the center point of the camera into a distance formula so as to obtain every side length of said display area of said display screen in the photographed picture;

(G) controlling said game machine main unit to calculate a proportional value of every side length of said display area of said display screen in the photographed picture relative to respective actual side length of said display screen, and then multiply every side length of said display area of said display screen in the photographed picture by the respective proportional value so as to obtain an actual side length data of every side of said display screen;

(H) driving said game machine main unit to write an affected quadratic simultaneous equation based on the actual side length data of every side length of said display screen and to determine quadratic simultaneous equation as to obtain X, Y values of the aiming point of said camera; and

(I) driving said game machine main unit to output the X, Y values of the aiming point of said camera to said display screen for further game program processing.